

10/723, 969.

cg



PATENT
128595

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: 7,113,873 B2

Issued: September 26, 2006

Inventor(s): Hoyte et al.

Assignee: General Electric Company

For: METHOD AND SYSTEM FOR USING
EDDY CURRENT TRANSDUCERS IN
PRESSURE MEASUREMENTS

Certificate
OCT 11 2007
of Correction

CERTIFICATE OF MAILING

I certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on October 5, 2007.

Robert H. Reiser, III
Reg. No. 45,348

Attention Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION OF
PATENT UNDER 37 C.F.R. 1.322(a)

Sir:

Attached is Form PTO/SB/44 suitable for printing.

Submitted herewith is a copy of the Notice of Allowance and Fee(s) Due and the Notice of Allowability dated February 6, 2006 and a copy of the Amendment filed December 21, 2005. Applicants respectfully submit that the corrections shown below are in accordance with the Amendment filed December 21, 2005. The corrections thereof do not involve such changes in the patent as would constitute new matter or would require re-examination.

Applicants respectfully request a Certificate of Correction for the following:

In Claim 24, column 12, line 21, after "said analyzer configured" insert -- to: --.

OCT 11 2007

PATENT
128595

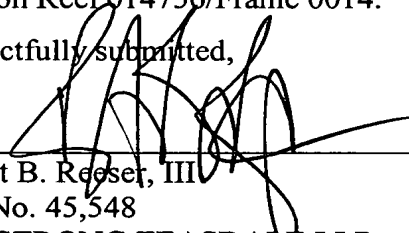
The correction is not due to any error by Applicants and no fee is due.

The Assignment for this patent is recorded on Reel 014756/Frame 0014.

Date: _____

OCT 15, 2007

Respectfully submitted,



Robert B. Reeser, III
Reg. No. 45,548
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070

OCT 11 2007

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 7,113,873 B2
APPLICATION NO. : 10/723,969
ISSUE DATE : September 26, 2006
INVENTOR(S) : Hoyte et al.

PAGE 1 OF 1

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Claim 24, column 12, line 21, after "said analyzer configured" insert -- to: --.

OCT 11 2007**MAILING ADDRESS OF SENDER:**

Robert B. Reeser, III
Armstrong Teasdale LLP
One Metropolitan Sq., Suite 2600
St. Louis, MO 63102

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



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UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

02/06/2006

John S. Beulick
Armstrong Teasdale LLP
One Metropolitan Square
Suite 2600
St. Louis, MO 63102

EXAMINER

KHUU, HIEN DIEU THI

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 02/06/2006

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,969	11/26/2003	Scott Mordin Hoyte	128595	9511

TITLE OF INVENTION: METHOD AND SYSTEM FOR USING EDDY CURRENT TRANSDUCERS IN PRESSURE MEASUREMENTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	05/08/2006

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

SCANNED

By: 2/10/06 VR

ENTERED

Date: 2/10/06
By: Kelly

17051-74



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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,969	11/26/2003	Scott Mordin Hoyte	128595	9511
7590	02/06/2006		EXAMINER	
John S. Beulick Armstrong Teasdale LLP One Metropolitan Square Suite 2600 St. Louis, MO 63102			KHUU, HIEN DIEU THI	
			ART UNIT	PAPER NUMBER
			2863	
DATE MAILED: 02/06/2006				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 155 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 155 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

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Notice of Allowability

Application No.

10/723,969

Examiner

Cindy D. Khuu

Applicant(s)

HOYTE ET AL.

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/21/05.
2. ☒ The allowed claim(s) is/are 1, 3-17 and 19-28.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

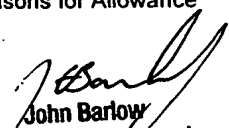
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


John Barlow
Supervisory Patent Examiner
Technology Center 2800

OCT 11 2007

COPY



PATENT
Attorney Docket No.: 128595

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Scott Mordin Hoyte et al. :
Serial No.: 10/723,969 : Group No.: 2863
Filed: November 26, 2003 : Examiner: Khuu, Hien Dieu Thi
For: METHOD AND SYSTEM :
FOR USING EDDY :
CURRENT TRANSDUCERS :
IN PRESSURE :
MEASUREMENTS :

Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL

1. Transmitted herewith is:
 - Amendment Transmittal which includes Certificate of Express Mail (3 pgs.) In Duplicate
 - Petition for Extension of Time (1 pg.)
 - Amendment in response to Office Action date August 10, 2005 (12 pgs.)
 - Two (2) Replacement Sheet Drawings, Fig. 1 and Fig. 2
 - Return Postcard

STATUS

2. Applicant
 - ☐ claims small entity status.
 - ☒ is other than a small entity.

CERTIFICATE OF MAILING BY EXPRESS MAIL TO THE COMMISSIONER FOR PATENTS

Express Mail No. EV679302369US
Date: December 21, 2005

I hereby certify that the documents listed above are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Mail Stop: Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.


Robert B. Rzeser, III, Reg. No. 45,548

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EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply.

(complete (a) or (b), as applicable)

- (a) X Applicant petitions for an extension of time under 37 C.F.R. 1.136
(Fees: 37 C.F.R. 1.17(a)-(d) for the total number of months checked below:)

Extension for response within:	Other than small entity Fee	Small entity Fee (if applicable)
<u> </u> first month	\$ 120.00	\$ 60.00
<u> X </u> second month	\$ 450.00	\$ 225.00
<u> </u> third month	\$ 1,020.00	\$ 510.00
<u> </u> fourth month	\$1,590.00	\$ 795.00
<u> </u> fifth month	\$2,160.00	\$1,080.00

Fee: \$450.00

If an additional extension of time is required, please consider this a petition therefor.

(Check and complete the next item, if applicable)

 An extension of months has already been secured. The fee paid therefor \$ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$120.00

OR

- (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

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FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col. 1) CLAIMS REMAINING AFTER AMENDMENT		(Col. 2) HIGHEST NO. PREVIOUSLY PAID FOR	(Col. 3) PRESENT EXTRA	SMALL ENTITY ADDITIONAL RATE FEE	OR	OTHER THAN SMALL ENTITY ADDITIONAL RATE FEE
TOTAL INDEP.		MINUS		=	x \$25.00 = \$		x \$50.00 = \$
		MINUS		=	x \$100.00 = \$		x \$200.00 = \$
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					+ \$180.00 = \$		+ \$360.00 = \$
					TOTAL ADDITIONAL FEE \$	OR	TOTAL ADDITIONAL FEE \$

- (a) ☒ No additional fee for Claims is required

OR

- (b) ☐ Total additional fee for claims required \$ _____

FEE PAYMENT

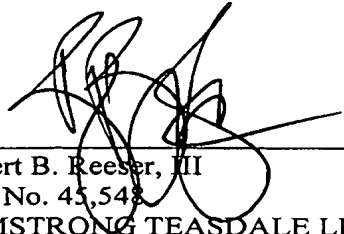
5. Attached is a check in the sum of \$ _____
- ☒ Charge Deposit Account No. 01-2384 the sum of \$450.00.
A duplicate of this transmittal is attached.

FEE DEFICIENCY

6. ☒ If any additional extension and/or fee is required, charge Deposit Account No. 01-2384.

AND/OR

- ☒ If any additional fee for claims is required, charge Deposit Account No. 01-2384.
7. ☐ Other:


Robert B. Reeser, III
Reg. No. 45,548
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One Metropolitan Square, Suite 2600
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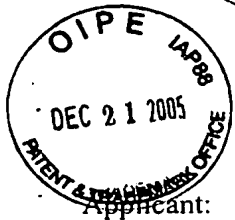
OCT 11 2007

Express Mail No.: EV 679302369US

12.22.05

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DFW
\$



PATENT
Attorney Docket No.: 128595

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Scott Mordin Hoyte et al.
Serial No.: 10/723,969
Filed: November 26, 2003
For: METHOD AND SYSTEM
FOR USING EDDY
CURRENT TRANSDUCERS
IN PRESSURE
MEASUREMENTS

Group No.: 2863

Examiner: Khuu, Hien Dieu Thi

PETITION FOR EXTENSION OF TIME

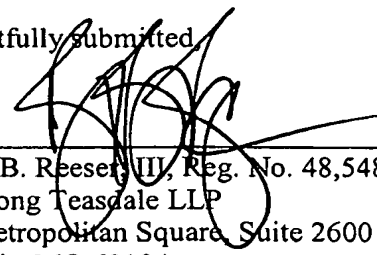
Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants hereby petition the Patent Office for a two (2) month extension of time for filing a Amendment in Response to the Office Action dated August 10, 2005 in the above-identified patent application.

The Patent Office is hereby authorized to charge Deposit Account 01-2384 in the amount of \$450.00 for payment of the extension now requested. If any additional extension fee is required, please charge Deposit Account No. 01-2384.

Respectfully submitted,


Robert B. Reeser III, Reg. No. 48,548
Armstrong Teasdale LLP
One Metropolitan Square, Suite 2600
St. Louis, MO 63104
314-621-5070

12/23/2005 MBIZUNES 00000115 012384 10723969
01 FC:1252 450.00 DA

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Express Mail No. EV 679302369

Attorney Dkt. No. 128595
Patent



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Scott Mordin Hoyte, et al.

Serial No.: 10/723,969

Filed: November 26, 2003

For: Methods And System for Using Eddy
Current Transducers in Pressure
Measurements

Art Unit: 2863

Examiner: Khuu, Hien Dieu Thi

AMENDMENT

Mail Stop: AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated August 10, 2005, please amend the above
application as follows:

OCT 11 2007

IN THE SPECIFICATION

Please delete paragraph [0041] and replace the following paragraph therefor:

[0041] Figure 7 is a flow diagram of an exemplary method 700 for generating a signal that is indicative of a pressure oscillation in a chamber. The method includes sensing 702 a pressure within the chamber. In the exemplary embodiment, a sensor that includes a diaphragm that is sensitive to the pressure within the chamber, for example, but, not limited to a gas turbine engine combustor, and an eddy current transducer coupled to a digital eddy current system. The eddy current transducer emits RF waves from a face proximate the diaphragm such that the RF waves interact with the diaphragm to create eddy currents within the diaphragm. The eddy currents, in turn, influence the complex impedance of the transducer in relation to the gap distance between the transducer emitting face and the diaphragm. As pressure fluctuates within the combustor due to normal combustion and/or combustion instability, the output signal from the transducer varies proportionally generating 704 a signal relative to the sensed pressure. The output signal is sampled and digitized 706 by a sampling circuit and the digitized signal is transformed 708 from the time domain to the frequency domain using a FFT analyzer to generate an energy spectrum. The energy spectrum is analyzed 710 to determine an energy spike indicative of a substantially non-random component of the digitized signal. A significant portion of the signal may be due to circuit and/or component generated noise relative to the information containing portion of the signal. The noise component of the signal may be spread substantially evenly through a plurality of frequencies. A repetitive signal, such as a signal generated by humming in the combustor is generally substantially centered at one or more characteristic frequencies. A fast Fourier transform of the signal may display the energy contained within each frequency level of the signal for a plurality of frequencies. The FFT has the effect of accentuating the non-random components of the signal relative to the noise or random components of the signal, such that, in the exemplary embodiment, small signal strengths due to humming and riding on a larger noisy static pressure signal may be processed to yield significant information regarding the operation of the combustor.

IN THE CLAIMS

1. (currently amended) A method for generating a signal indicative of a pressure oscillation in a chamber, said method comprising:

sensing deflection of a diaphragm coupled in fluid communication with the chamber to determine a pressure within the chamber;

generating a signal that is relative to the sensed pressure;

digitizing the signal;

transforming the digitized signal from a time domain to a frequency domain to generate an energy spectrum; and

analyzing the energy spectrum to determine an energy spike indicative of a substantially non-random component of the digitized signal.

2. (canceled)

3. (currently amended) A method in accordance with ~~Claim 2~~ Claim 1 wherein sensing deflection of a diaphragm coupled in fluid communication with the chamber comprises sensing deflection of the diaphragm using an eddy current sensor.

4. (original) A method in accordance with Claim 1 wherein the chamber is a combustor and wherein sensing a pressure within the chamber comprises sensing a dynamic pressure indicative of humming within the combustor.

5. (original) A method in accordance with Claim 1 wherein the sensed pressure includes a static pressure component and a dynamic pressure component and wherein generating a signal that is relative to the sensed pressure comprises generating a signal relative to the dynamic pressure component.

6. (original) A method in accordance with Claim 5 wherein generating a signal that is relative to the dynamic pressure component comprises generating an analog electrical signal relative to the dynamic pressure component.

7. (original) A method in accordance with Claim 1 wherein digitizing the signal comprises periodically sampling the signal using an analog-to-digital converter.

8. (original) A method in accordance with Claim 7 wherein digitizing the signal further comprises convolving the digitized signal.

9. (original) A method in accordance with Claim 1 wherein transforming the digitized signal from the time domain to the frequency domain comprises applying a Fourier transform to the digitized signal.

10. (original) A method in accordance with Claim 1 wherein transforming the digitized signal comprises transforming the digitized signal in real-time.

11. (original) A method in accordance with Claim 1 wherein transforming the digitized signal from the time domain to the frequency domain comprises:

converting the digitized signal into an analog signal using a digital-to-analog converter; and

applying a Fourier transform to the analog signal.

12. (original) A method in accordance with Claim 1 wherein analyzing the energy spectrum comprises:

determining a signal energy spike amplitude at a predetermined frequency of the energy spectrum, the frequency correlative to a combustor humming frequency;

comparing the spike amplitude to a predetermined threshold energy amplitude limit; and

reducing humming based on the comparison.

13. (original) A method in accordance with Claim 1 wherein analyzing the energy spectrum comprises:

determining a signal energy spike amplitude at a frequency of the energy spectrum;

comparing the spike to a predetermined threshold energy amplitude limit corresponding to the respective frequency; and

reducing humming based on the comparison.

14. (original) A method in accordance with Claim 1 wherein the signal includes a noise component and a repetitive signal component and wherein analyzing the energy spectrum comprises amplifying the repetitive signal component while not substantially amplifying the noise component.

15. (original) A system for generating a signal indicative of a pressure oscillation in a chamber, said system comprising:

a sensor positioned in fluid communication with the chamber, said sensor configured to generate an output signal relative to pressure within the chamber, wherein said sensor comprises one of a diaphragm and an eddy current transducer;

a sampling circuit configured to periodically receive the output signal, said sampling circuit configured to digitize the received signal;

a Fourier transform circuit configured to generate an energy spectrum of the digitized signal; and

an analyzer configured to process the energy spectrum to determine an energy spike indicative of a substantially non-random component of the digitized signal.

16. (currently amended) A system in accordance with Claim 15 wherein said sensor ~~comprises a diaphragm~~ that is configured to deflect relative to a pressure variation within the chamber.

17. (original) A system in accordance with Claim 16 wherein said sensor further comprises a transducer configured to generate an output signal relative to the deflection.

18. (canceled)

19. (original) A system in accordance with Claim 15 wherein the chamber is a combustor and wherein said sensor is configured to sense a dynamic pressure indicative of humming within the combustor.

20. (original) A system in accordance with Claim 19 wherein the combustor includes a static pressure component and a dynamic pressure component and wherein said sensor is configured generate a signal relative to the dynamic pressure component.

21. (original) A system in accordance with Claim 15 wherein said sampling circuit comprises an analog-to-digital converter.

22. (original) A system in accordance with Claim 15 wherein said sampling circuit is coupled to a convolution circuit that is configured to generate a complex impedance value relative to the sensor output signal.

23. (original) A system in accordance with Claim 15 wherein said analyzer is configured to:

determine a signal energy spike amplitude at a predetermined frequency of the energy spectrum, the frequency correlative to a combustor humming frequency;

compare the spike amplitude to a predetermined threshold energy amplitude limit;
and

employ the comparison to facilitate reducing humming.

24. (original) A system in accordance with Claim 15 wherein said analyzer is configured to:

determine a signal energy spike amplitude at a frequency of the energy spectrum;

compare the spike to a predetermined threshold energy amplitude limit corresponding to the respective frequency; and

employ the comparison to facilitate reducing humming.

25. (original) A system in accordance with Claim 15 wherein the signal includes a noise component and a repetitive signal component and wherein said analyzer is configured to amplify the repetitive signal component while not substantially amplifying the noise component.

26. (original) A system for generating a signal indicative of humming in a gas turbine combustor, said system comprising:

a sensor positioned in fluid communication with the chamber, said sensor comprising:

a diaphragm configured to deflect relative to a pressure variation within the chamber, and

an eddy current transducer configured to generate an output signal relative to the deflection;

a sampling circuit comprising an analog-to-digital converter, said sampling circuit configured to:

periodically receive the output signal, and

digitize the received signal;

a convolution circuit configured to generate a complex impedance value relative to the sensor output signal;

a Fourier transform circuit configured to generate an energy spectrum of the digitized signal; and

an analyzer configured to process the energy spectrum, said analyzer configured to:

determine a signal energy spike amplitude at a frequency of the energy spectrum;

compare the spike to a predetermined threshold energy amplitude limit corresponding to the respective frequency; and

employ the comparison to facilitate reducing humming.

27. (original) A system in accordance with Claim 26 wherein said analyzer is configured to determine a signal energy spike amplitude at a predetermined frequency of the energy spectrum, the frequency correlative to a combustor humming frequency;

28. (original) A system in accordance with Claim 26 wherein the signal includes a noise component and a repetitive signal component and wherein said analyzer is configured to amplify the repetitive signal component while not substantially amplifying the noise component.

Remarks

The Office Action mailed August 10, 2005 has been carefully reviewed and the foregoing amendment and following remarks have been made in consequence thereof.

Claims 1, 3-17, and 19-28 are now pending in this application. Claims 2 and 18 have been canceled. Claims 1, 4, 7, 9, 10, 12, 13, 15, 19, 21, 23, and 24 stand rejected. Claims 2, 3, 5, 6, 8, 11, 14, 16-18, 20, 22, and 25 are objected to. Claims 26-28 are allowed.

The objections to the drawings under 37 C.F.R. 1.83 (a), is respectfully traversed. Specifically, under 37 C.F.R. 1.83 (a), features disclosed in the description and claims need not be shown in the drawings where their detailed illustration is not essential for a proper understanding of the invention. More specifically, the Federal Circuit has opined in *Verve LLC v. Crane Cams, Inc.*, 65 USPQ 2d 1051, 1053-1054 (Fed. Cir. 2002), that “[p]atent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification information readily understood by practitioners, lest every patent be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field.” In the present case, Applicants respectfully submit that an artisan of ordinary skill in the art, after reading the specification in light of the Figures, would understand how the inclusion of a diaphragm as recited within Claim 26. Specifically, the functionality and operation of the diaphragm is clearly described in the specification in such a manner that one of ordinary skill in the art should understand its operation. Accordingly, Applicants respectfully submit that the recitations of Claim 26 are supported by the specification, and would be understood by one of ordinary skill in the art. For the reasons set forth above, Applicants respectfully request the objection to the drawings under 37 C.F.R. 1.83 (a) be withdrawn.

The objections to the drawings under 37 C.F.R. 1.83 (a), is respectfully traversed. Specifically, Figures 1, and 2 have been amended to remove references numbers 82, 86, and 214. No new matter has been added. Replacement sheets for Figures 1 and 2 are attached.

The Figures have not amended to remove reference numbers 224 or 710. Rather, the specification has been amended at paragraph [0041] to include reference number 710. With respect to reference 224, paragraph 0037 of the specification recites:

In one embodiment, FFT 218 includes a processor 222 including a device 224, for example, a floppy disk drive, CD-ROM drive, DVD drive, magnetic optical disk (MOD) device, or any other digital device including a network connecting device such as an Ethernet device for reading instructions and/or data from a computer-readable medium (not shown), such as a floppy disk, a CD-ROM, a DVD or another digital source such as a network or the Internet, as well as yet to be developed digital means.

As such, Applicants did not revise the figures or the specification. Accordingly, for at least the reasons set forth above, Applicants respectfully request the objection to the drawings under 37 C.F.R. 1.83 (a) be withdrawn.

The rejection of Claims 1, 4, 7, 9, 10, 12, 13, 15, 19, 21, 23, and 24 under 35 U.S.C. § 102(e) as being anticipated by Shu et al. (U.S. Pat. No. 5,544,478) is respectfully traversed.

With respect to Claim 1, Claim 2 was indicated as being allowable if rewritten in independent form including all of the limitations of the base claim. Claim 2 has been canceled and independent Claim 1 has been rewritten in independent form including the limitations from Claim 2. Accordingly, Claim 1 is submitted to be patentable over Shu et al.

Claims 4, 7, 9, 10, 12, and 13 depend from independent Claim 1. When the recitations of Claims 4, 7, 9, 10, 12, and 13 are considered in combination with the recitations of Claim 1, Applicants submit that depend Claims 4, 7, 9, 10, 12, and 13 likewise are patentable over Shu et al.

With respect to Claim 15, Claim 18 was indicated as being allowable if rewritten in independent form including all of the limitations of the base claim. Claim 18 has been canceled and independent Claim 15 has been rewritten in independent form including the limitations from Claim 18. Accordingly, Claim 15 is submitted to be patentable over Shu et al.

Claims 19, 21, 23, and 24 depend from independent Claim 15. When the recitations of Claims 19, 21, 23, and 24 are considered in combination with the recitations of Claim 15, Applicants submit that depend Claims 19, 21, 23, and 24 likewise are patentable over Shu et al.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 4, 7, 9, 10, 12, 13, 15, 19, 21, 23, and 24 be withdrawn.

Claims 2, 3, 5, 6, 8, 11, 14, 16-18, 20, 22, and 25 were indicated as objected to but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 2 has been canceled and independent Claim 1 has been amended to include all of the limitations of Claim 2. Accordingly, Claim 1 is submitted to be in condition for allowance.

Claims 3, 5, 6, 8, 11, and 14 depend from independent Claim 1. When the recitations of Claims 3, 5, 6, 8, 11, 14 are considered in combination with the recitations of Claim 1, Applicants submit that depend Claims 3, 5, 6, 8, 11, 14 likewise are in condition for allowance.

With respect to Claims 16-18, 20, 22, and 25, Claim 18 has been canceled and independent Claim 15 has been amended to include all of the limitations of Claim 18. Accordingly, Claim 15 is submitted to be in condition for allowance.

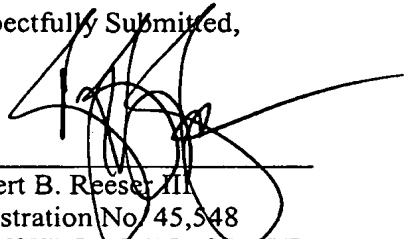
Claims 16, 17, 20, 22, and 25 depend from independent Claim 15. When the recitations of Claims 16-18, 20, 22, and 25 are considered in combination with the recitations of Claim 15,

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Applicants submit that depend Claims 16-18, 20, 22, and 25 likewise are in condition for allowance.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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OCT 11 2007

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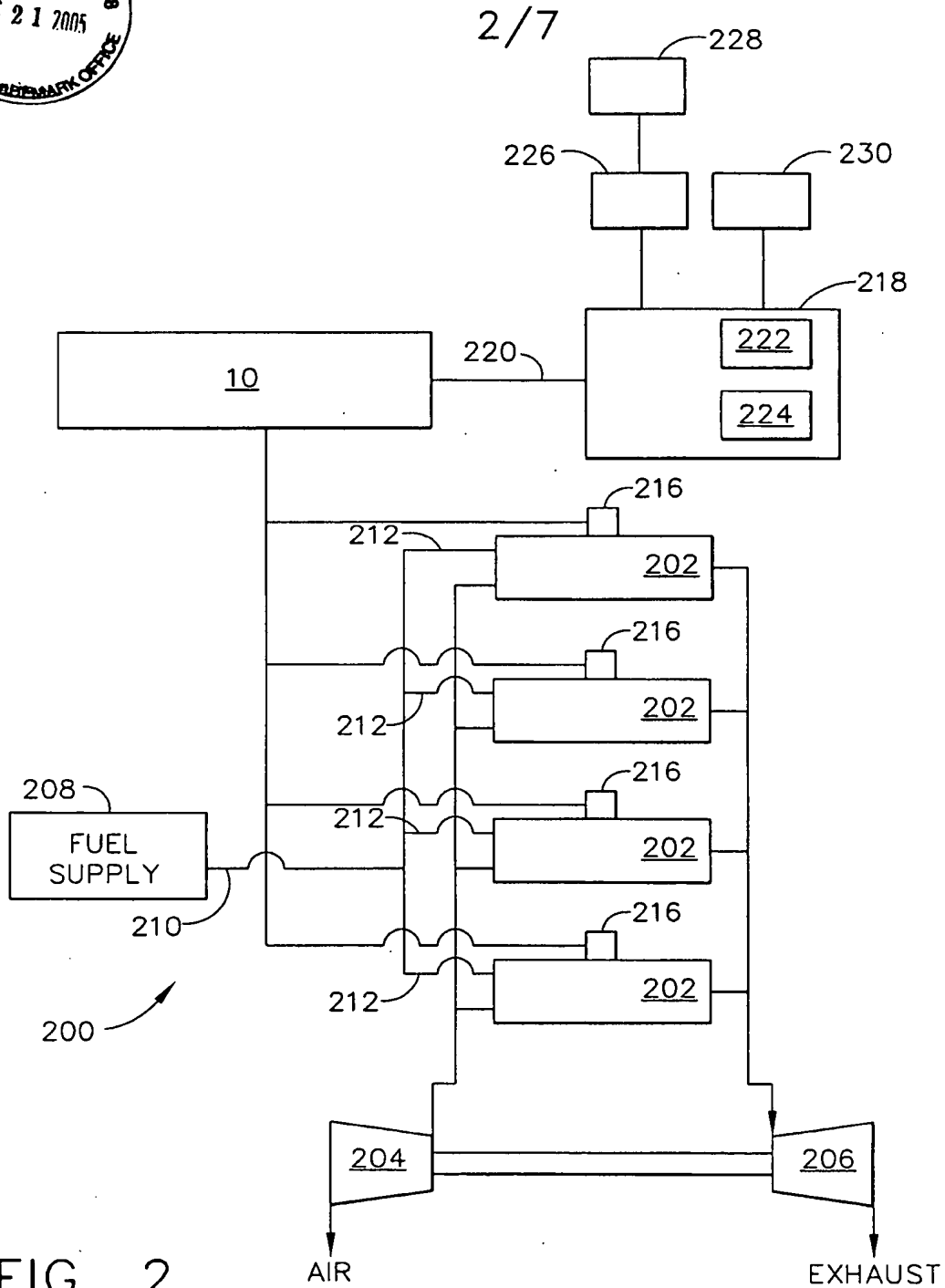
Title: Method and System for Using Eddy Current Transducers in Pressure Measurements

Inventor(s): Scott Mordin Hoyte, et al.

Serial No: 10/723,969

Docket No.: 128595 (17851-74)

Atty: Robert B. Reeser III; Phone: (314) 621-5070



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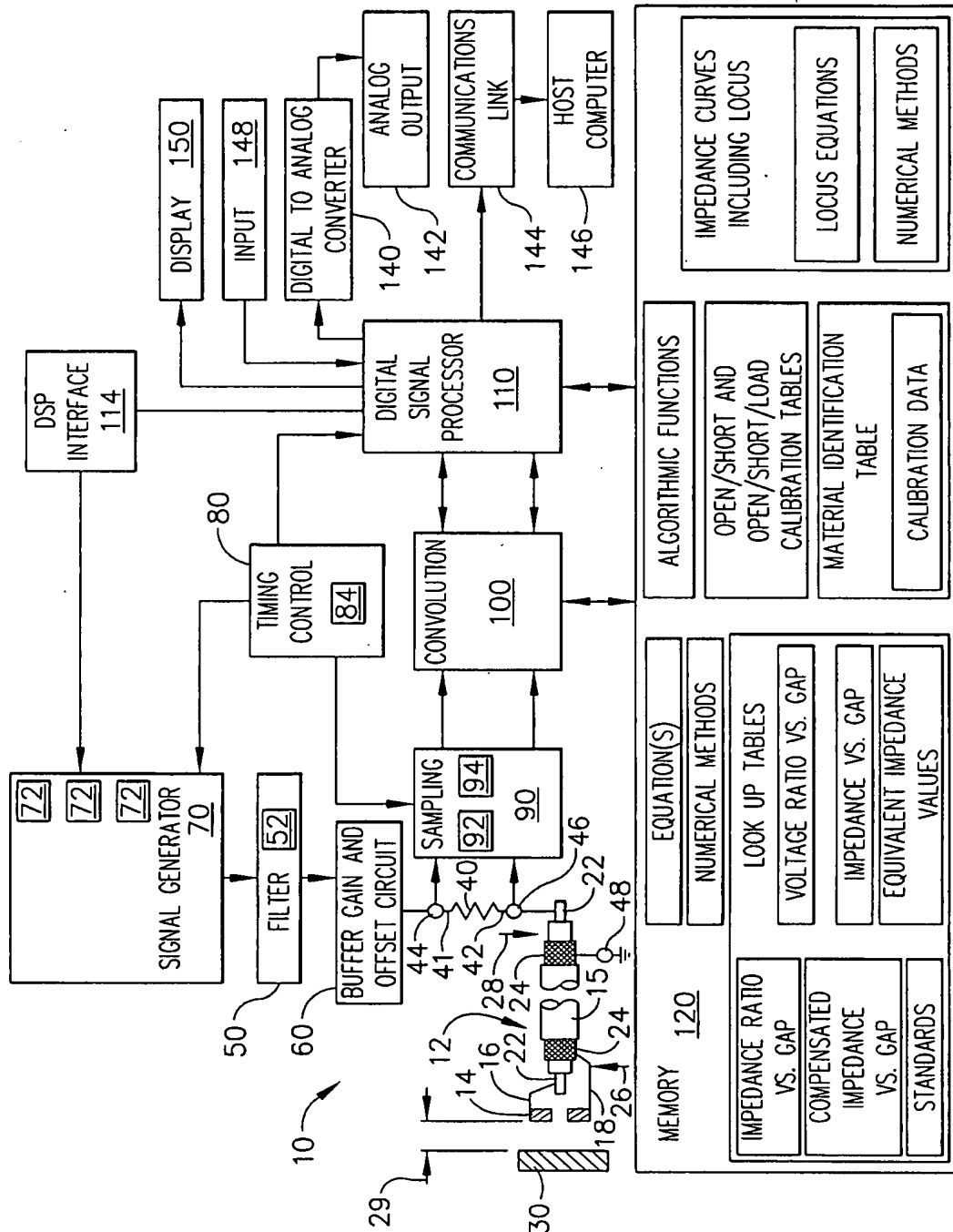


FIG. 1